

ABSTRACT

What is provided is a direct-current converter which improves unstableness of operations owing to an error of a bottom
5 detection circuit and fluctuations of a detection point which are caused by disturbance. The direct-current converter includes a bottom detection circuit 13 which detects a minimum
voltage of a main switch Q1 after an auxiliary switch Q2 is switched
off, an ideal gate signal generation circuit 21 which generates
10 an ideal gate signal for switching on the main switch Q1 at a time of the minimum voltage of the main switch Q1 based on an output of the bottom detection circuit 13, a comparison circuit
22 which calculates an error output between the ideal gate signal generated by the ideal gate signal generation circuit 21 and
15 an actual gate signal which switches on the main switch Q1, and a first delay circuit 14 which controls a delay of an ON time of the main switch Q1 by the actual gate signal based on the error output of the comparison circuit 22, thereby performing
control to make the actual gate signal approach the ideal gate
20 signal.